



Atty. Dkt. No. 086531-0138

***IN THE UNITED STATES PATENT and TRADEMARK OFFICE***

Applicant: Tomohisa ARAI et al.  
Title: CUTTER COMPOSED OF NI-CR ALLOY  
Appl. No.: 10/514,196  
International Filing Date: 5/14/2003  
371(c) Date: 11/12/2004  
Examiner: Tima Michele McGuthry Banks  
Art Unit: 1793  
Confirmation Number: 4571

**AMENDMENT and REPLY UNDER 37 CFR 1.111**

Mail Stop  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This communication is responsive to the Non-Final Office Action dated September 9, 2008, concerning the above-referenced patent application.

Applicant has enclosed with this amendment a Petition for Extension of Time to make this response timely.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 2 of this document.

**Remarks/Arguments** begin on page 4 of this document.

Please amend the application as follows:

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Cancelled)
2. (Cancelled)
3. (Cancelled)
4. (Cancelled)
5. (Cancelled)
6. (Currently Amended) A cutter comprising a Ni-Cr alloy comprising:  
from 32 to 44 mass percent of Cr,  
from 2.3 to 6 mass percent of Al,  
the balance being Ni, impurities, and additional trace elements, and  
wherein the cutter has a Rockwell C hardness of 52 or more, and  
wherein the Ni-Cr alloy further comprises:  
from 0.005 to 0.025 mass percent of Mg;  
from 0.005 to 0.02 mass percent of Ca;  
from 0.005 to 0.03 mass percent of B; and  
from 0.005 to 0.02 mass percent of rare earth elements including Y; as the  
impurities and the additional trace elements, and  
wherein the total content of Mg, Ca, and B is greater than 0.015 and less than or equal  
to 0.03 mass percent, the total content of P, O, and S is greater than zero and less than or  
equal to 0.003 mass percent and the total content of Mn, Cu and Si is greater than zero and  
less than or equal to 0.03 mass percent,  
wherein the Ni-Cr alloy comprises a texture comprising a mixture of a Cr-rich  $\alpha$   
phase, a Ni-rich phase  $\gamma$  phase, and an intermetallic compound phase composed of  $\text{Ni}_3\text{Al}$  as a  
basic composition  $\gamma$  phase and the Ni-Cr alloy has an average grain size of 1 mm or less,

[[and]]

wherein the cutter comprises a mirror-finished surface formed by final polishing with a polisher, so that the cutter has an aesthetic property, and

wherein a moving distance of the cutter required for completely cutting a hemp rope is doubled or less compared with an initial state of the cutter even after 1,000 cut operations are performed when a rope cut test is performed under conditions that a linear blade part of the cutter is pressed on a hemp rope having a diameter of 10 mm and the cutter is reciprocated in the horizontal direction while a load of 2 kg is applied to the cutter whereby the moving distance of the cutter required for completely cutting the hemp rope is repeatedly measured.

7. (Cancelled)

8. (Cancelled)

9. (Cancelled)

10. (Cancelled)